

### REMARKS

This application has been reviewed in light of the Office Action mailed October 3, 2002. Claims 5, 14-16, 29, 30 and 36-38 have been cancelled without prejudice. Claims 1, 6, 11, 13, 19, 25, 34 and 35 have been amended without adding new matter. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made." Claims 1-4, 6-13, 17-28, 31-35, and 39-46 are now pending in this application.

The drawings are objected to as being informal. As requested by the Examiner, Applicant is submitting concurrently with this Amendment, under separate cover, formal drawings.

Claim 11 stands rejected under 35 U.S.C. § 112, second ¶, as being indefinite, because it is dependent upon itself. Applicant has amended the dependency of claim 11 to depend from claim 10. All pending claims are now considered to be in full compliance with 35 U.S.C. § 112.

Claims 1, 2, 13 and 14 stand rejected under 35 U.S.C. § 102 as being anticipated by Smillie, III, U.S. Patent No. 4,725,183 (hereinafter "Smillie"). Reconsideration is requested in light of the amendments made and the reasons that follow.

Claim 1 has been amended to recite a "sliding mechanism capable of movement in a first horizontal direction, [the] sliding mechanism comprising a block and a lead screw for moving [the] block; and a third section disposed over [the] sliding mechanism and attached to said block." As discussed on page 11 and Figures 7-8, for example, the specification discloses an upper plate 40 which is moved by the movement of the lead block 198.

Smillie fails to teach or suggest this claim limitation. Rather, Smillie discloses (with reference to Figure 5) a sliding system comprising cylindrical channel 36 which

moves inside a guide channel 43 on ball bearings 44. Column 8, lines 21-46. Thus, Smillie fails to teach or suggest a sliding mechanism comprising a block and a lead screw for moving the block and a third section disposed over the sliding mechanism and attached to the block. For at least this reason, amended claim 1 is allowable over Smillie. Claim 2 depends from claim 1 and contains every limitation of claim 1, and should be allowed together with claim 1.

Claim 13 has been amended to recite a “base frame, a first section, and ... a lifting mechanism disposed between [the] base frame and [the] first section for lifting and lowering [the] first section in a vertical direction with respect to [the] base frame, [the] lifting mechanism comprising a jacking screw mechanism and a gas cylinder assembly.” This embodiment of the invention is shown, for example, in Figure 1 of the specification.

Smillie fails to teach or suggest this claim limitation. Smillie discloses a jack screw 52 of a scissor assembly 55 for lifting or lowering a bearing plate 41 with respect to a base 25, but fails to teach or suggest a gas cylinder assembly as part of the lifting mechanism. For at least this reason, amended claim 13 is allowable over Smillie. Claim 14 has been cancelled.

Claims 35, 39, 40 and 41 stand rejected under 35 U.S.C. § 102 as being anticipated by Beach, U.S. Patent No. 2,931,519 (hereinafter “Beach”). Reconsideration is requested in light of amendments made to the claims and the following reasons.

Claim 35, as amended, recites a method for positioning an object comprising “operating a lift mechanism to move [a] support section vertically, wherein operating [the] lift mechanism comprises manually rotating an input shaft attached to jacking mechanisms and supplying a pressurized gas to gas cylinder assemblies.” Beach fails to teach or suggest this claim limitation because Beach does not disclose or suggest supplying a pressurized gas to gas cylinder assemblies. For at least this reason, amended claim 35 should be allowed. Claims 39 and 40 depend from claim 35 and contain every limitation of claim 35, and should be allowed for at least the same reasons as claim 35.

Claim 41 recites a method for transferring an object comprising “providing a base frame, a top frame, and a middle frame disposed between said base frame and said top frame; [and] providing a slide mechanism between [the] middle frame and [the] top frame” (emphasis added). Thus, as can be seen in Figure 1, for example, the specification discloses an embodiment wherein a middle frame 30 is disposed between a lower frame 20 and a top frame 40. The top frame 40 is therefore elevationally higher than the middle frame 30. In addition, a sliding mechanism 70 is provided between the middle frame 30 and the top frame 40. Beach fails to teach or suggest these claim limitations.

The Office Action asserts that Beach teaches a “base section (14), [and] a middle and a support section (60) adapted to move vertically and horizontally.” Office Action, page 3. Thus, the Office Action does not assert that Beach teaches a middle frame disposed between the base frame and the top frame. Indeed, Beach does not. Beach discloses a lower frame 10 and an upper frame 11. See Figure 1. Beach further discloses an adjuster assembly 13 which comprises components adapted for horizontal movement. Significantly, with reference to Figure 3, 4 and 5, the adjuster assembly 13 is not elevationally higher than the upper frame 11, but rather is on the same level with upper frame 11 in the vertical direction. There is no frame in Beach which is disposed between a lower and upper frame, and which has a sliding mechanism between such frame and the upper frame, as recited in claim 41. For at least these reasons, claim 41 should be allowed over Beach.

Claims 5, 6, 17 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Smillie, as applied to claims 1 and 13, and further in view of Beach. Claim 5 has been canceled. Reconsideration of claims 6, 17 and 18 is respectfully requested.

Initially, claim 6 has been amended to depend from claim 1, and claims 17 and 18 depend from claim 13. This rejection is predicated upon the rejection of claims 1 and 13 over Smillie; as discussed above, amended claims 1 and 13 are believed to be allowable over Smillie. Beach adds nothing to remedy the deficiencies of Smillie with respect to claims 1 and 13. Regarding claim 1, Beach fails to teach or suggest a sliding mechanism

comprising a block and a lead screw for moving the block. With respect to claim 13, Beach fails to teach or suggest a lifting mechanism comprising a jacking screw mechanism and a gas cylinder assembly. Thus, claims 6, 17 and 18 should be allowed for at least the reasons for allowance of claims 1 and 13.

Further, claims 6 and 18 recite a sliding mechanism which comprises "slider blocks having slide rails." An embodiment of this feature of the invention is illustrated in Figure 7, which shows slider blocks 190 on slide rails 182. Smillie and Beach, taken alone or in combination, fail to teach or suggest this claim limitation. The Office Action asserts that Smillie teaches "sliding blocks (36) and slide rails (43)." Office Action, page 5. This is not the case. Element 36 in Smillie is a sliding channel, and element 43 is a guide channel. Elements 36 and 43 move relative to one another via rolling of ball bearings 44, and thus are not slider blocks capable of sliding on slide rails. For this additional reason, claims 6 and 18 are allowable over the cited references.

In addition, the two references are not properly combinable. Smillie relates to a lift mechanism which fits into the trunk of a car, and is fixed to the floor of the trunk so that it remains stationary while the car is in motion. To the contrary, Beach relates to an aircraft component dolly, which is designed to move on around wheels. Thus, one skilled in the art would not look to the mobile support devices of the aircraft industry to improve upon a stationary support device designed for a car trunk. For this additional reason, claims 6, 17 and 18 should be allowed.

Claims 3, 7, 15 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Smillie, as applied to claims 1 and 13, and further in view of Stone, U.S. Patent No. 5,299,906 (hereinafter "Stone"). Reconsideration is requested.

Initially, this rejection is based upon the rejection of claims 1 and 13 over Smillie. As discussed above, amended claims 1 and 13 are allowable over Smillie and Stone adds nothing to Smillie to remedy its deficiencies with respect to claims 1 and 13. Claims 3 and 5 depend from claim 1, and claims 15 and 19 depend from claim 13. These dependent

claims contain every limitation of their base claims and should be allowed for at least these reasons.

Moreover, Smillie and Stone are not properly combinable. As discussed above, Smillie discloses a lift mechanism for a car's trunk. Smillie's mechanism has a battery powered motor that drives the jackscrew-type lift mechanism. Stone relates to a pneumatic load elevator having an air actuator chamber formed of a compressible bellows and a fixed volume reservoir. The Office Action asserts that it would have been obvious to provide Smillie with the compressed gas assembly of Stone. Applicant respectfully disagrees. First, there is no suggestion or motivation found anywhere in Smillie to use an compressed gas assembly. More importantly, such a modification would not be practicable. One skilled in the art would not add a compressed gas source and a compressible bellows to the trunk of a passenger car in favor of a compact battery operated motor. For this additional reason, claims 3, 7, 15 and 19 should be allowed.

Claims 4 and 16 stand rejected under 35 U.S.C. § 103 as being unpatenable over Smillie as applied to claims 1 and 13, and further in view of Mills et al., U.S. Patent No. 4,461,455 (hereinafter "Mills"). Claim 16 has been cancelled. Reconsideration of claim 4 requested for the following reasons.

Initially, the rejection of claim 4 is based upon the rejection of claim 1 over Smillie. As discussed above, amended claim 1 is believed to be allowable over Smillie, and Mills adds nothing to remedy the deficiencies in the teachings of Smillie. Claim 4 depends from claim 1 and contains every limitation of claim 1, and should be allowable for at least this reason.

In addition, claim 4 recites a lifting mechanism that comprises a "jacking screw mechanism and a gas cylinder assembly." This lifting mechanism is adapted for lifting a "second section [which] is disposed over [the] lifting mechanism" of claim 1. The Office Action contends that Mills teaches a "lift mechanism that contains a jacking screw assembly ... as well as a pneumatic lift assembly." Office Action, page 5. As discussed in

more detail below with respect to claim 34, the jacking screw and the pneumatic lift assembly of Mills are not part of the same lifting mechanism and cannot cause one section to move, as recited in claim 4. This is an additional reason why claim 4 is allowable.

Finally, no motivation exists to combine the teachings of Smillie and Mills. The Office Action asserts that such motivation exists in order to “align the object being moved with its target area without potentially crushing the object being moved.” Office Action, page 6. Applicant disagrees. Given the limited space of car trunks, it would have been contrary to intentions of one skilled in the art to install a dual lifting mechanism in the trunk of a car: a battery operated motor and a pneumatic lifting system with a pressurized air source. For this additional reason, claim 4 is allowable.

Claims 3, 7, 15 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Smillie as applied to claims 1 and 13, and further in view of Shiiba et al., U.S. Patent No. 4,643,630 (hereinafter “Shiiba”). Reconsideration is requested.

Initially, this rejection is based upon the rejection of claims 1 and 13 over Smillie. As discussed above, amended claims 1 and 13 are allowable over Smillie and Shiiba adds nothing to Smillie to remedy its deficiencies with respect to claims 1 and 13. Claims 3 and 5 depend from claim 1, and claims 15 and 19 depend from claim 13. These dependent claims contain every limitation of their base claims and should be allowed for at least these reason.

Moreover, Smillie and Shiiba are not properly combinable. As discussed above, Smillie discloses a lift mechanism for a car’s trunk. Smillie’s mechanism has a battery powered motor that drives the jackscrew-type lift mechanism. Shiiba relates to a heavy object loading jig having a piston cylinder assembly movable by pressurized air. The Office Action asserts that it would have been obvious to provide Smillie with the compressed gas assembly of Shiiba. Applicant respectfully disagrees. First, there is no suggestion or motivation found anywhere in Smillie to use a compressed gas assembly. More importantly, such a modification would not be practicable. One skilled in the art would

not add a compressed gas source to drive a piston cylinder assembly, in favor of a compact battery operated motor, to the trunk of a passenger car. For this additional reason, claims 3, 7, 15 and 19 should be allowed.

Claims 8-10 and 20-23 stand rejected under 35 U.S.C. § 103 as being unpatenable over Smillie as applied to claims 1 and 13, and further in view of Miller, U.S. Patent No. 3,524,556 (hereinafter "Miller"). Reconsideration is requested.

Claims 8-10 depend from claim 1 and claims 20-23 depend from claim 13. Because this rejection is predicated upon the rejection of claims 1 and 13 over Smillie, and as discussed above, amended claims 1 and 13 are allowable over Smillie, these dependent claims should be allowed. Miller adds nothing to Smillie to remedy its deficiencies with respect to claims 1 and 13.

Further, it would not be possible to modify Smillie as suggested by Office Action. The Office Action asserts that it would have been obvious to add to Smillie the castors or wheels of Miller in order to allow the device to be positioned. To the contrary, one skilled in the art would not add wheels to Smillie's device. As explained above, the Smillie device is fixed to the floor of a car's trunk. To modify it by adding Miller's wheels would make Smillie's device roll around, out of control in a car's trunk, and unsuitable for its intended purpose. This is an additional reason why claims 8-10 and 20-23 should be allowed.

Claims 12 and 24 stand rejected under 35 U.S.C. § 103 as being unpatenable over Smillie as applied to claims 1 and 13, and further in view of Ueda et al., U.S. Patent No. 5,023,534 (hereinafter "Ueda").

Initially, claims 12 and 24 are allowable because their base claims, 1 and 13, are allowable over Smillie, and Ueda adds nothing to Smillie to remedy its deficiencies with respect to claims 1 and 13.

Further, even assuming, *arguendo*, that Smillie and Ueda are properly combinable, and they are not, the references fail to teach or suggest the limitations recited in claims 12 and 24. Claim 12 recites a “second sliding mechanism over [the] third section capable of motion in a second horizontal direction perpendicular to [the] first horizontal direction, and a fourth section disposed over [the] second sliding mechanism.” Similarly, claim 24 recites a “third section containing a second sliding mechanism disposed over [the] second section.” The references, taken alone or in combination, fail to teach or suggest these limitations. The Office Action contends only that Ueda teaches a platform that is movable in two perpendicular directions. However, nothing in either reference teaches an additional section over an underlying section (a fourth section in claim 12 which has first, second, third and fourth sections; and a third section in claim 24 which has a base, and first, second and third sections) as recited in claims 12 and 24. For this additional reason, these claims are allowable.

Claims 25, 26, 30, 32 and 33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Smillie in view of Miller. Reconsideration is respectfully requested in light of the amendments made and the following reasons.

Claim 25 has been amended to recite an apparatus for supporting an object having a “mechanism for sliding an object ... wherein [the] mechanism for sliding comprises a lead screw and a movable block mechanism, and slider blocks having slide rails.” Smillie and Miller, taken alone or in combination, fail to teach or suggest this claim limitation. For at least this reason, claim 25 is allowable over the cited references. The Office Action contends (with respect to claim 30 whose limitation was incorporated into claim 25) that Smillie teaches a “sliding portion as having slider blocks (36) and slide rails (43).” Office Action, page 8. This is not the case. Element 36 in Smillie is a sliding channel, and element 43 is a guide channel. Elements 36 and 43 move relative to one another via rolling of ball bearings 44, and thus are not slider blocks having slide rails, as claimed. In addition, neither references, taken alone or in combination, teaches or suggests a lead screw and a movable block mechanism.



Claim 30 has been cancelled. Claims 26, 32 and 33 depend from claim 25 and contain every limitation of claim 25. Claims 26, 32 and 33 should be allowed based on at least the reasons for allowance of claim 25, and because the unique combinations recited by these depended claims are neither taught nor suggested by the cited references.

Claims 27 and 31 stand rejected under 35 U.S.C. § 103 as being unpatenable over Smillie in view of Miller as applied to claim 25, and further in view of Shiiba. As discussed above, amended claim 25 is believed to be allowable over Smillie in view of Miller, and Shiiba adds nothing to remedy the deficiency of Smillie and Miller with respect to claim 25. Further, Shiiba and Smillie are not properly combinable as discussed above. For at least these reasons, claims 27 and 31 should be allowed.

Claim 28 stands rejected under 35 U.S.C. § 103 as being unpatenable over Smillie in view of Miller as applied to claim 25, and further in view of Mills. As discussed above, amended claim 25 is believed to be allowable over Smillie in view of Miller, and Mills adds nothing to remedy the deficiency of Smillie and Miller with respect to claim 25. Further, Mills and Smillie are not properly combinable as discussed above. For at least these reasons, claim 28 should be allowed.

Claim 29 stands rejected under 35 U.S.C. § 103 as being unpatenable over Smillie in view of Miller as applied to claim 25, and further in view of Beach. Claim 29 has been cancelled.

Claim 34 stands rejected under 35 U.S.C. § 103 as being unpatenable over Mills in view of Beach. This rejection is respectfully traversed for at least the following reasons.

Claim 34 recites a “support frame having ... a lifting and lowering mechanism disposed over said support frame, [the] lifting and lowering mechanism comprising at least four jacking screws ... [and] at least two gas cylinders having ..., wherein [the] gas cylinders assist [the] jacking screws in [the] lifting and lowering mechanism.” Claim 34 further recites a “first plate connected to [the] lifting and lowering mechanism such that

[the] lifting and lowering mechanism imparts motion to [the] first plate.” Thus, the jacking screws and the gas cylinders impart motion to the first plate.

The Office Action asserts that Mills teaches a “support frame (24); ... a lifting and lowering mechanism over said frame, comprising: at least 4 jacking screws (64, 66, 68, 70); ... [and] at least two gas cylinders (120, 122, 124, 126).” Office Action, pages 9-10. However, the components of Mills cited by the Office Action are not arranged, and thus could not perform, as does the mechanism of claim 34.

The Mills apparatus has a lower platform 22 and an upper platform 20. The upper platform 20 has the rubber elevator bellows 120, 122 which move a lift beam 130, and elevator bellows 124, 126 which move a lift beam 136. The lift beams 130, 136 support a load. Column 6, line 39 to column 7, line 32. The jacking screws, however, do not move the lift beams 130, 136 which support the load. The jacking screws 64, 66, 68, 70 are actuated to move the lower platform 22 downwardly away from the upper platform 20 so that the Mills apparatus rests on bearings 54 of the lower platform 22. Column 7, lines 35-37. Thus, the Mills rubber elevator bellows and jacking screws cannot function to lift or lower one element (the “first plate”), as recited in claim 34.

Further, claim 34 recites a “sliding mechanism ... comprising a block having a transmission system for moving [the] block in a ... horizontal direction ...; [and] a second plate disposed over said sliding mechanism and attached to said block.” The Office Action asserts that Beach teaches a “sliding mechanism having a block (111) and a ... a second plate (106) attached to said block.” Office Action, page 10. However, Beach’s “block” 111 is actually a “nut 111 [which is] anchored to an end beam.” Column 7, lines 42-43. Thus, the nut 111 cannot possibly be the claimed block which is movable in a horizontal direction. Moreover, element 106 in Beach is a connecting rod which is not attached to the nut 111. See Figure 2. Thus, contrary to the assertion in the Office Action, element 106 is neither a “plate,” nor is it “attached” to the nut 111.

Thus, even assuming for the sake of argument that Mills and Beach can somehow be combined as asserted by the Office Action, the references, either alone or in combination, fail to teach or suggest several elements of claim 34. For at least these reasons, claim 34 should be allowed.

Claims 36 and 42 stand rejected under 35 U.S.C. § 103 as being unpatenable over Beach as applied to claims 35 and 41, and further in view of Nemoto, U.S. Patent No. 6,271,657 (hereinafter "Nemoto"). As discussed above, amended claim 35 and claim 41 are believed to be allowable over Beach, and Nemoto adds nothing to Beach to remedy its deficiencies with respect to claims 35 and 41. Claims 36 and 42 depend from claims 35 and 41, respectively, and should be allowed together with their base claims.

Claims 37 and 43 stand rejected under 35 U.S.C. § 103 as being unpatenable over Beach as applied to claims 35 and 41, and further in view of Shiiba. As discussed above, amended claim 35 and claim 41 are believed to be allowable over Beach, and Shiiba adds nothing to Beach to remedy its deficiencies with respect to claims 35 and 41. Claims 37 and 43 depend from claims 35 and 41, respectively, and should be allowed together with their base claims.

Claims 38 and 44 stand rejected under 35 U.S.C. § 103 as being unpatenable over Beach as applied to claims 35 and 41, and further in view of Mills and further in view of Nemoto. As discussed above, amended claim 35 and claim 41 are believed to be allowable over Beach, and Nemoto and/or Mills add nothing to Beach to remedy its deficiencies with respect to claims 35 and 41. Claims 38 and 44 depend from claims 35 and 41, respectively, and should be allowed together with their base claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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Respectfully submitted,

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**Version With Markings to Show Changes Made**

1. (Amended) An apparatus for positioning an object comprising:

a first section having a lifting mechanism capable of movement in a vertical direction;

a second section disposed over said lifting mechanism capable of moving corresponding to said lifting mechanism, said second section having a first sliding mechanism capable of movement in a first horizontal direction, said first sliding mechanism comprising a block and a lead screw for moving said block; and

a third section disposed over said sliding mechanism and attached to said block, capable of moving in response to movement of said sliding mechanism and said lifting mechanism, said third section having a surface for supporting an object.

6. (Amended) The apparatus according to claim [5] 1 wherein said sliding mechanism further comprises slider blocks having slide rails.

11. (Amended) The apparatus according to claim 1 [1]0 wherein said first section further comprises a clearance between said first section and an underlying surface whereby said apparatus can clear obstacles when moving in said second horizontal direction.

13. (Amended) An adjustable support for positioning a piece of equipment comprising:

a base frame, a first section, and a second section;

a lifting mechanism disposed between said base frame and said first section for lifting and lowering said first section in a vertical direction with respect to said base frame, said lifting mechanism comprising a jacking screw mechanism and a gas cylinder assembly;  
and

a first sliding mechanism disposed between said first section and said second section for sliding said second section with respect to said first section, said sliding occurring in a direction perpendicular to said vertical direction, said second section having a surface to support a piece of equipment.

19. (Amended) The support according to claim [15] 13 further comprising a pressurized gas source for said gas cylinder assemblies.

25. (Amended) An apparatus for supporting an object, said apparatus having a mechanism for lifting and lowering the object in a vertical direction and a separate mechanism for sliding an object in a first horizontal direction, said apparatus having wheels for rolling along a surface in a second horizontal direction orthogonal to said first horizontal direction;

wherein said mechanism for sliding comprises a lead screw and a movable block mechanism, and slider blocks having slide rails.

34. (Amended) An apparatus for positioning an object comprising:

a support frame having wheels for rolling said apparatus in a first horizontal direction;

a lifting and lowering mechanism disposed over said support frame, said lifting and lowering mechanism comprising at least four jacking screws having a transmission system for operation of said jacking screws, said lifting and lowering [system] mechanism further comprising at least two gas cylinders having a pressurized gas source for operating said gas cylinders, wherein said gas cylinders assist said jacking screws in said lifting and lowering mechanism;

a first plate connected to said lifting and lowering mechanism such that said lifting and lowering mechanism imparts motion to said first plate;

a sliding mechanism disposed over said first plate, said sliding mechanism comprising a block having a transmission system for moving said block in a second horizontal direction perpendicular to said first horizontal direction;

a second plate disposed over said sliding mechanism and attached to said block such that said sliding mechanism, said lifting and lowering mechanism, and the rolling of said wheels impart motion to said second plate, said second plate having a surface for supporting an object.

35. (Amended) A method for positioning an object comprising:

providing a table having a support section adapted to move vertically and horizontally;

placing an object on said support section;

moving said table toward a desired destination for said object;

operating a lift mechanism to move said support section vertically, wherein  
operating said lift mechanism comprises manually rotating an input shaft attached to  
jacking mechanisms and supplying a pressurized gas to gas cylinder assemblies;

operating a slide mechanism to move said support section horizontally;

said object being positioned in a desired location by said moving and operating  
actions.